CELYYPU

USER MANUAL

POWER INVERTER

PURE SINE WAVE

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Important Safety Instructions

General Safety Information

. Installation and wiring must comply with the Local and National Electric Codes (NEC)and must be done by a certified technician.

. Read all of the instructions and cautions in the manual before beginning the installation.

• There are no serviceable parts for this inverter. Do NOT disassemble or attempt to repair the inverter.

• Make sure all connections going into and from the inverter are tight. There may be sparks when making connections, therefore, make sure there are not flammable materials or gases near installation.

Inverter Safety

. The inverters are suitable for 12V battery banks; Please choose correct voltage inverters and battery!

. Always make sure inverter is in OFF position and disconnect all AC and DC connecting when working on any circuit associated with the inverter.

· Never connect the AC output of the unit directly to an Electrical Breaker Panel/ Load Centre which is also fed from the utility power / generator.

. When connecting battery terminals, ensure the polarity of the battery connections is correct. Incorrect polarity may cause permanent damage to the unit.

. Be careful when touching bare terminals of capacitors as they may retain high lethal voltages even after power is removed.

Battery Safety

. Do NOT let the positive (+) and negative (-) terminals of the battery touch each other.

• Use only sealed lead-acid, flooded, lithium battery, ryor gel batteries which must be deep cycle.

. Explosive battery gases may be present while charging. Be certain there is enough ventilation to release the gases.

. Be careful when working with large lead acid batteries. Wear eye protection and have fresh water available in case there is contact with the battery acid.

. Over-charging and excessive gas precipitation may damage the battery plates and activate material shedding on them. Too high of an equalizing charge or too long of one may cause damage. Please carefully review the specific requirements of the battery used in the system.

Installation Safety

- The unit should be installed in a well-ventilated, cool, and dry environment. Make sure the fans of the unit and the ventilation holes are not blocked.
- Do not expose the unit to rain, moisture, snow, or liquids of any type.

Key Features

- Robust and sleek design
- Clean power for safe operation of sensitive electronics
- Easy-to-read LCD screen display and LED indicator light
- Multiple protection features (LVD, HVD, AC Overload and Over Temperature)
- Pure sine wave - more stable power conversion and output
- AC output and 5V/3.4A USB port
- Remote controller with LCD screen display
- Excellent Surge Rating : 2x the Power Rating

Pure Sine Wave

The CELYYPU power inverters output a pure sine wave, similar to the wave-form of the grid power. In a pure sine wave, the voltage rises and falls smoothly with very low harmonic distortion, providing cleaner utility-like power.

This provides users with stable enough power to operate tools, fans, lights, computers, and other electronics without any interference. Pure sine wave inverters are, in many cases, more efficient, enabling users to consume less energy and accommodate more device capabilities. The primary advantage of pure sine wave inverters is their ability to power sensitive electronic devices that require a high-quality waveform with minimal harmonic distortion. Virtually any electronic device can be powered using a pure sine wave inverter.

Multiple Protection

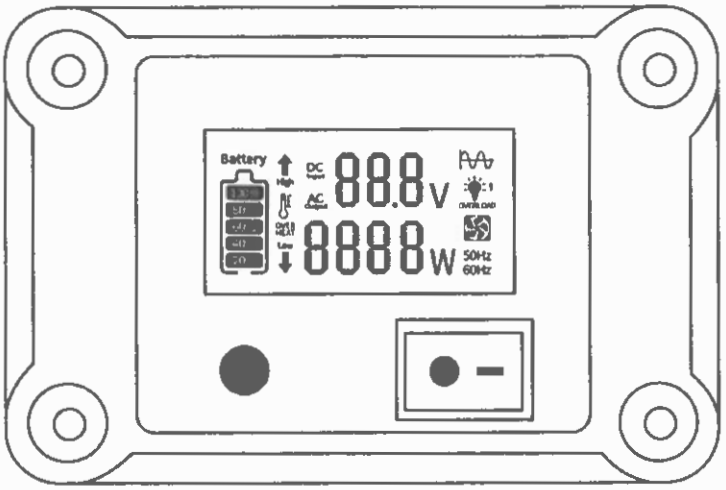
The LCD screen displays content, LED indicators, and an alarm sound for input under/over voltage protection, input overload/short-circuit protection, and device over-temperature protection. A smart cooling fan system with temperature control enables the device to run smoother, cooler, and quieter.

Remote Controller with LCD Screen Display

The remote control allows you to observe and control from a distance with LCD screen display. The equipment comes with long cable of remote controller, which can be installed in RVs and homes according to user needs.

Remote Control

This CELYYPU power inverter comes with remote controller, you can power the inverter on or off. The LCD screen of remote controller will display the input voltage, output voltage, product wattage, high temperature alarm, trouble alarm. You can keep track of device issues through LCD screen display of remote controller.



Wire length: about 4.5M(14.76ft)

NOTE

1.Alarm - The red indicator light is not lit, and the battery symbol on the remote control screen is flashing, indicating a fault in the input voltage. However, the inverter still continues to provide output.

2.**Shutdown** -The inverter emits a continuous buzzing sound upon shutdown, and the red LED light on the remote controller illuminates. The inverter then promptly shuts down, resulting in no AC output. This indicates that your inverter is reporting troubles, and you should inspect your battery, cables, and inverter.

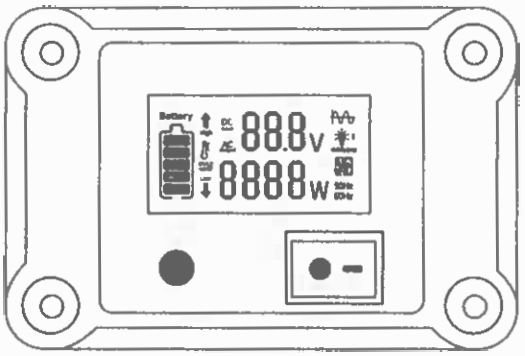
3.**For the low voltage shutdown** - If the input voltage above 12.5V, the inverter will restart automatically.

4.**For the high voltage shutdown** - If the input voltage below the 15V, the inverter will restart automatically.

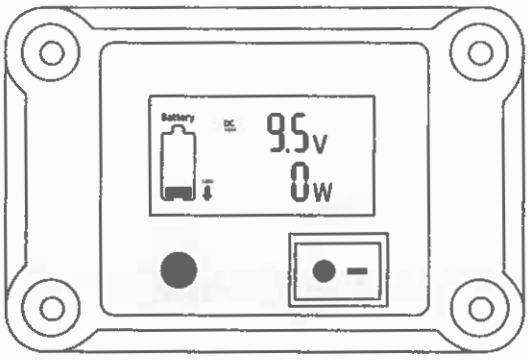
5.**For the other troubles** - you'll need to manually turn on the switch to restart the inverter.

Trouble Display

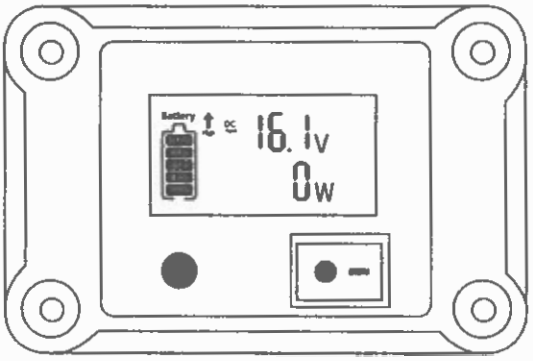
· When encountering overload, over-current, short-circuit, and overheat, the corresponding symbols on the inverter will flash.



· When it is low input voltage, the battery symbol is empty and the battery symbol on the inverter will flash.

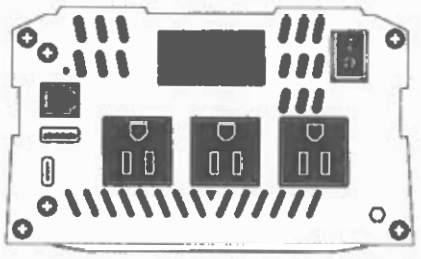


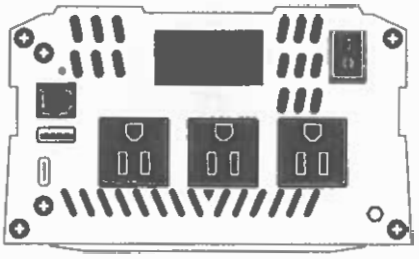
· When it is high input voltage, the battery symbol is full and the battery symbol on the inverter will flash.



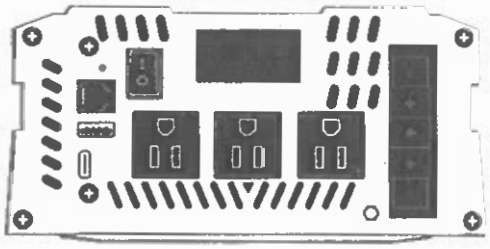
Identification of Parts (AC Side)

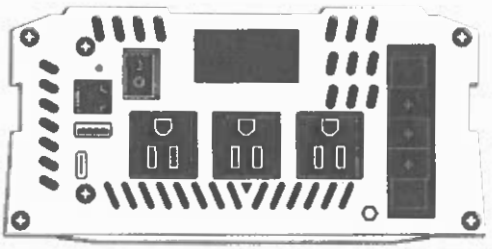
Model: 1000W Inverter **Model:1500W Inverter**





Model: 2000W Inverter **Model: 3000W/3500W Inverter**





1. **LCD Display Screen** — Display input voltage, output voltage, and product wattage. When the inverter encounters any issues, the LCD screen will display the corresponding trouble code.

2. **AC Outlets** — 120V AC ± 10%, ensuring that the total output does not exceed the inverter's rated power.

3. **USB Power Port** —5 volts / 3.1A for fast charging tablets, smartphones, and other small electronic devices, offering faster charging than most inverters.

4. **Type-C Port** — A 30W charging port for your smartphone or electronic devices.

5. **ON/OFF Switch** — Controls output.

6. **Power LED (Green)** — When this green LED is illuminated, the inverter is operating normally.

7. **Fault LED (Red)** — The red indicator turns on when the inverter shuts down due to overheat, overload, low voltage, or high voltage.

8. **Remote Switch Connection** — Insert wired remote switch to the connection port.

9. **L N PE** - The 'L' is positive, the 'N' is negative, and the 'PE' is the ground wire.

10. **Round Red Switch** - Press it to power on or power off this inverter.

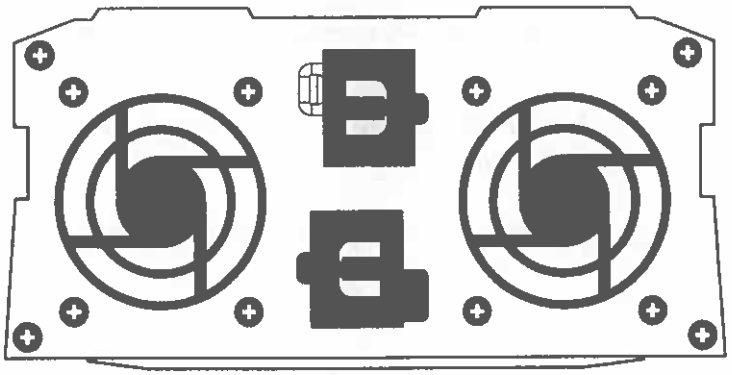
11. **Square Red Switch** - Simply push the button up or down to select input voltage.

Select Input Voltage

With the advancement of lithium battery technology, the CELYYPU inverter has undergone upgrades and modifications. These enhancements enable the selection of the appropriate input voltage to prevent the inverter from rapidly depleting the battery's charge. This, in turn, safeguards the battery, extending its lifespan and complementing the Battery Management System (BMS) function.

The rated input voltage ranges from 9.5V to 16V. However, users have the flexibility to manually select the input voltage within a range of 9.5V, 10V, 10.5V, and 11V. The default input voltage for the product is 9.5V, and users can manually adjust it as needed. The CELYYPU power inverter is designed to accommodate various battery types and voltage levels. Its pure sine wave output ensures stable and efficient performance. The enhanced voltage selection function further contributes to battery protection, improving overall operational efficiency.

Identification of Parts (DC Side)



KEY PARTS

1.Positive Terminal — Positive (+) DC Input (Red)
2.Cooling Fans — Thermally controlled
3.Negative Terminal — Negative (–) DC Input (Black)

NOTE:

The Smart Cooling Fan is Temperature Control.

1.When the inverter internal temperature >45℃ or the machine power efficiency >40%, the cooling fan will run automatically.

2. When the inverter internal temperature <42℃ or the power efficiency < 30%, the cooling fan will stop working automatically.

SPECIFICATIONS

Model	12V-1000W	12V-1500W	12V-2000W	12V-3000W	12V3500W
Rated Input Voltage	12VDC				
Input Voltage Range	9.5-16VDC				
Continuous Power	1000W	1500W	2000W	3000W	3500W
Peak Power	2000W	3000W	4000W	6000W	70000W
Over Voltage Shutdown	16VDC	16VDC	16VDC	16VDC	16VDC
Low Voltage Shutdown	9.5VDC	9.5VDC	9.5VDC	9.5VDC	9.5VDC
Low Voltage Alarm	10VDC	10VDC	10VDC	10VDC	10VDC
No Load Current	0.8A	0.5A	0.6A	0.7A	0.7A
Over Load Protection	1200W	1700W	2200W	3200W	3500W
Output Voltage	□110 / □120V AC±10%(Refer to label)				
Frequency	□60Hz ±1Hz				
Wave Form	Pure Sine Wave				
Efficiency	≥ 90%				
Over Heat Protection	149°F±8°F				
Short Circuit Protection	Yes				
Display	LCD				
USB	5VDC, 3.1A				
Type-C	Max 30W (5V / 3.1A, 7V / 2.4A, 9V / 2A, 12V / 1.5A)				
Cooling Fan	Thermal controlled cooling fan. It works only when the inverter housing temperature reaches 113°F.				
Operating Temperature (Automatic Recovery/ Shutdown)	32-113°F				
Storage Temperature	14-113°F				

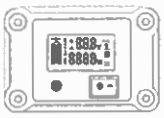
SPECIFICATIONS

Model	24V-2000W	24V-3000W	24V-3500W
Rated Input Voltage	24VDC		
Input Voltage Range	19-32VDC		
Continuous Power	2000W	3000W	3500W
Peak Power	400W	6000W	7000W
Over Voltage Shutdown	32VDC	32VDC	32VDC
Low Voltage Shutdown	19VDC	19VDC	19VDC
Low Voltage Alarm	20VDC	20 VDC	20 VDC
No Load Current	0.3A	0.4A	0.4A
Over Load Protection	2200W	3200W	3500W
Output Voltage	□110 / □120V AC±10%(Refer to label)		
Frequency	□60Hz ±1Hz		
Wave Form	Pure Sine Wave		
Efficiency	≥ 90%		
Over Heat Protection	149°F±8°F		
Short Circuit Protection	Yes		
Display	LCD		
USB	5VDC, 3.1A		
Type-C	Max 30W (5V / 3.1A, 7V / 2.4A, 9V / 2A, 12V / 1.5A)		
Cooling Fan	Thermal controlled cooling fan. It works only when the inverter housing temperature reaches 113°F.		
Operating Temperature (Automatic Recovery/ Shutdown)	32-113°F		
Storage Temperature	14-113°F		

SPECIFICATIONS

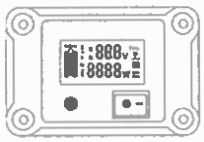
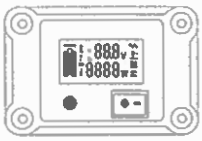
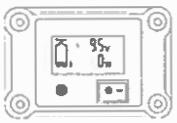
Model	48V-2000W	48V-3000W	48V-3500W
Rated Input Voltage	48VDC		
Input Voltage Range	39-62DC		
Continuous Power	2000W	3000W	3500W
Peak Power	4000W	6000W	7000W
Over Voltage Shutdown	62VDC	62VDC	62VDC
Low Voltage Shutdown	39VDC	39VDC	39VDC
Low Voltage Alarm	40.9VDC	40.9VDC	40.9VDC
No Load Current	0.3A	0.2A	0.2A
Over Load Protection	2200W	3200W	3500W
Output Voltage	□110 / □120V AC±10%(Refer to label)		
Frequency	□60Hz ±1Hz		
Wave Form	Pure Sine Wave		
Efficiency	≥ 90%		
Over Heat Protection	149°F±8°F		
Short Circuit Protection	Yes		
Display	LCD		
USB	5VDC, 3.1A		
Type-C	Max 30W (5V / 3.1A, 7V / 2.4A, 9V / 2A, 12V / 1.5A)		
Cooling Fan	Thermal controlled cooling fan. It works only when the inverter housing temperature reaches 113°F.		
Operating Temperature (Automatic Recovery/ Shutdown)	32-113°F		
Storage Temperature	14-113°F		

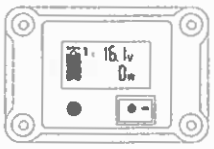
Inverter Troubleshooting(Inverter Alarm)

Trouble Display	Problems	Inverter Alarm	Solutions
	**Inverter Overheat**	Thermometer symbol flashes, the green light is illuminated, red light is not lit, However, the inverter still continues to provide output	• Turn off the load and let it cool naturally for 10 to 30 minutes. Restart it after it resumes to normal temperature. • Reduce the load . • Avoid blocking the vent and improve the ventilation condition.
	Inverter Overload or Short-circuited	Lamp symbol flashes, the green light is illuminated, red light is not lit, However, the inverter still continues to provide output	• Reduce the load power or choose a bigger inverter. • Disconnect the inverter and turn off the ON/OFF switch to reset
	Low Input Voltage	Battery symbol flashes, battery is empty, the green light is illuminated, red light is not lit, However, the inverter still continues to provide output	• Recharge the battery. • Battery may be too small. Please contact us for recommended battery sizes. • Check the cable connections and ensure the cable sizes are sufficient. Use provided cables if included. The shorter and thicker cables the better. • One or some of the batteries in the battery group may be defective, remove the defective battery.

	High Input Voltage	Battery symbol flashes, battery is full, the green light is illuminated, red light is not lit, However, the inverter still continues to provide output	• Check the battery charger is not connected to the battery. • Do not use it when the battery is charging Disconnect the solar panel while the battery is fully charged. • Confirm whether the input battery is correct.
	Cooling Fan Runs	Fan symbol flashes, AC output normal	The Smart Cooling Fan is Temperature Control. 1. When the inverter internal temperature >45℃ or the machine power efficiency >40%, the cooling fan will run automatically. 2. When the inverter internal temperature <42℃ or the power efficiency < 30%, the cooling fan will stop working automatically.

Inverter Troubleshooting(Inverter Shutdown)

Trouble Display	Problems	Inverter Shutdown	Solutions
	**Inverter Overheat**	Thermometer symbol flashes, the red light is lit, and the inverter emits a continuous buzzing sound upon shutdown, No AC output	• Turn off the load and let it cool naturally for 10 to 30 minutes. Restart it after it resumes to normal temperature. • Reduce the load • Avoid blocking the vent and improve the ventilation condition.
	**Inverter Overload or Short-circuited**	Lamp symbol flashes, the red light is lit, and the inverter emits a continuous buzzing sound upon shutdown, No AC output	• Reduce the load power or choose a bigger inverter. • Disconnect the inverter and turn off the ON/OFF switch to reset
	**Low Input Voltage**	Battery symbol flashes, battery is empty, the red light is lit, and the inverter emits a continuous buzzing sound upon shutdown, No AC output	• Recharge the battery. • Battery may be too small. Please contact us for recommended battery sizes. • Check the cable connections and ensure the cable sizes are sufficient. Use provided cables if included. The shorter and thicker cables the better. • One or some of the batteries in the battery group may be defective, remove the defective battery.

	**High Input Voltage**	Battery symbol flashes, battery is full, the red light is lit, and the inverter emits a continuous buzzing sound upon shutdown, No AC output	• Check the battery charger is not connected to the battery. • Do not use it when the battery is charging Disconnect the solar panel while the battery is fully charged. • Confirm whether the input battery is correct.

Inverter Troubleshooting

Problems	Cause	Solutions
No output voltage and buzzer sounds continuous or intermittent and shutdown?	Input battery voltage is low voltage	• Recharge the battery. • Battery may be too small. Please contact us for recommended battery sizes. • Check the cable connections and ensure the cable sizes are sufficient. Use provided cables if included. The shorter and thicker cables the better. • One or some of the batteries in the battery group may be defective, remove the defective battery.
	Input battery voltage is high voltage	• Check the battery charger is not connected to the battery. • Do not use it when the battery is charging Disconnect the solar panel while the battery is fully charged. • Confirm whether the input battery is correct.
	Overload	Reduce the load power or choose a bigger inverter.
	Over temperature	• Turn off the load and let it cool naturally for 10 to 30 minutes. Restart it after it resumes to normal temperature. • Reduce the load . • Avoid blocking the vent and improve the ventilation condition.

No AC output voltage?	1. The power switch is off. 2. Poor contact with battery . 3. Inline fuse(if has) may be burnt.	• Press the inverter power switch or remote controller power switch to turn it on, • Check the cables and make sure they are tightly connected . • Check the inline fuse is fine or remove circuit breaker to test the inverter again. • One or some of the batteries in the battery group may be defective, remove the defective battery.
Cannot drive the load even less power than the size of inverter?	1. Power of load is too large, or the actual power of the appliance exceeds the max power of inverter. 2. The starting power is larger than rated power (especially for appliances with motor, this kind of inductive loads require a large rush of power to start. Even a 80W fridge may need a 1000 watt inverter) . 3. Battery is too small.	• Reduce the load power, or turn on the appliance first, then turn on the inverter. • Choose a bigger inverter. • Change a bigger battery and ensure fully charged. • Choose the shorter and thicker cables.
Starting alarm ?	The main reason is that the instantaneous current is too large, which leads to the detection of low voltage and triggers under-voltage alarm.	Please restart the inverter several times.

Installation

WARNING: Make sure inverter is in the off position before connecting anything.

CAUTION: Do not over-torque or over tighten the terminals. This could potentially damage the unit.

Location Recommendations

Never install the inverter in a sealed enclosure with flooded batteries. Gas can accumulate and there is a risk of explosion.

Ensure installation follows the following guidelines:

1. **Cool, dry, well-ventilated area** — Heat is the worst enemy for electronic equipment.Inverters must be in an area where the fans are not blocked or where they are not hit directly by the sun. They should be in an area free of any kind of moisture and allow for clearance of at least 10" around the unit to provide for adequate ventilation.

2. **Protection against fire hazard** — the unit should be away from any flammable material, liquids, or any other combustible material. The unit can spark and the consequences could be severe.

3. **Close proximity to battery bank**—prevent excessive voltage drop by keeping the unit close to the battery bank and having a properly sized wire going from the battery bank to the inverter.

4.Do not install the inverter in the same compartment as the battery bank because it could serve as a potential fire hazard.

5.**Limiting electromagnetic interference (EMI)** — ensure the inverter is firmly grounded to a building, vehicle, or earth grounded. Keep the inverter away from EMI receptors such as TVs, radios, and other audio/visual electronics to prevent damage/interference to the equipment.

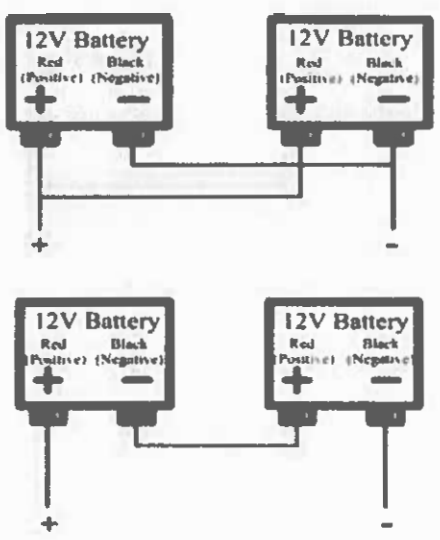
1. **Secure inverter**—the inverter could be stand alone or mounted using the outlying terminals on the inverter.

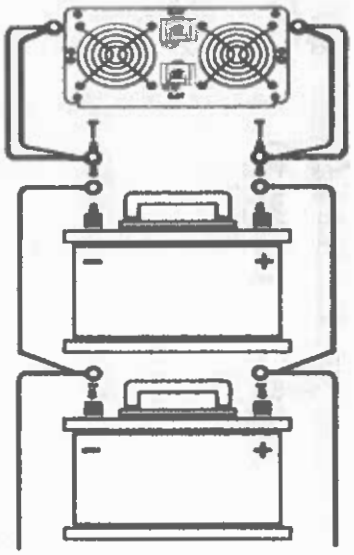
2. The inverter should never be mounted vertically on a vertical surface since it would present a hazard for the fan opening which is crucial for cooling the inverter.

Note: Connection

If you have multiple 12V batteries, please connect them in series or parallel according to the model you ordered(12V for parallel connection, 24V for series connections).

Note that connecting(+) terminal and (-) terminal will cause failure. Please connect+(plus), -(minus) each other.





Sizing a Battery Bank

1.The battery is for supplying DC input voltage to the inverter. Its rated voltage should be the same as the rated input voltage of the CELYYPU inverter.Any voltage that exceeds the input voltage range of the inverter will cause the inverter to be overloaded and may damage the inverter.

2.The battery ought to supply enough current for the load.(The load is the amperage or wattage rating of the equipment being powered by the inverter.)A small capacity battery cannot supply enough power for large electrical equipment and it will cause the inverter to be under-voltage.

For determining the required battery capacity size is shown below for reference:

1.Determine the Watts (Amps *Volts) of the load

(Each appliance has technical specifications indicates the wattage or voltage and amperage required for operation)

2.Utilize the formula Amps=Watts/Volts

3.Inverter consumption=Amps*10%

(Due to inverter efficiency 90%, the recommended estimate for the calculation is 10%)

4.Estimated load runtime

(The capacity of the battery depends on the load wattage and runtime. Most loads are not constant, so estimation is essential.)

5. **Determine Ah(Ampere-Hour) of the battery**

Example: Using 12VDC battery to run a 1200 Watts hotplate for 2 hours needs at least 220Ah battery.(10%Inverter consumption) The calculations are as follows:	
Utilize the formula Amps=Watts/Volts	1200 Watts /12 Volts = 100 Amps
Inverter consumption	100 Ampsx10%=10Amps
Load runtime = 2 hours	(100 Amps+10)x2 hours =220 Ah
Conclusion: At least a 220 Ah battery must be selected in order to use the 1200 watts hotplate at 2 hours a day. However, determining the capacity of the battery is also dependent on the battery that is able to handle repeated discharge/charge cycles.	

• This is just an example. Actual quantities vary by battery capacity and rates.

• Running wattage may fluctuate. To power the hotplate in the example, must use an inverter of at least 1500 watts.

DC Side Connection

• The CELYYPU Pure Sine Wave Inverters are suitable for 12V battery bank systems ONLY. Not following the minimum DC requirement will cause irreversible damage to the unit.

• Be careful of the positive and negative poles. Reversing the poles might cause permanent damage to the inverter. It will surely blow the internal fuse.

• Damage to the CELYYPU inverters due to reverse polarity is NOT covered by warranty.

• The input terminals of the inverters have large capacitors connected to them. Once a positive and negative wire are connected to the terminals, it will complete the

circuit, and commence drawing a heavy current momentarily. As a result, there may be a sparking occurring even if the inverter is in the off position. To minimize

sparking, it is recommended that the user have the appropriate size wire feeding into the inverters

AC Side Operation

1.Connect electronic devices to electrical socket (s) on inverter. Flip inverter power to ON position (on AC side)

2.When finished, switch AC devices off first, then turn off inverter switch.

• **CAUTION** : Avoid switching on the inverter with the load (electronic devices) already switched on. This may trigger an overload since some electronic devices have an initial high power surge to start.

• **CAUTION** : When switching off the inverter, turn off the electronic devices first. Although the inverter is off, the capacitors will still have a charge, so the DC and AC terminals must be disconnected if altering the circuitry.

Warranty

• Thank you for purchasing CELYYPU power inverter, your trust will encourage us to produce more high quality items. We always provide the best customer service to our each customer.

• We provide 12 months warranty for CELYYPU product. Any problems please feel free to reach out to our after-sales service. Our CELYYPU support will re- ply you in 12 hours.

• To better service you , please send us email with your order number, problem details, problem pictures or videos, which can help us solve your problems faster.